

**IN THE CLAIMS**

1. (Currently Amended) An apparatus for transmitting light comprising:  
a first substrate having a first surface including at least one first optically active area;  
a second substrate having a second surface positioned in opposing spaced apart relationship from said first surface, where said second surface contains at least one second optically active area opposing said at least one first optically active area, where said second substrate is supported substantially by said first substrate;  
a polymer layer disposed between said first and second substrates; ~~and~~  
a waveguide disposed within said polymer layer between said first and second optically active areas on said first and second surfaces, where said waveguide comprises a polymer core and a cladding for transmitting light therebetween; and  
one or more additional structures embedded within said polymer layer disposed between said first and second substrates.

2. (Currently Amended) The apparatus of claim 1, wherein said cladding comprises a ~~second~~ polymer material, and wherein said ~~first~~ polymer core is a photosensitive polymer.

3. (Currently Amended) The apparatus of claim 2, wherein said ~~first~~ polymer core comprises a fluorinated polymer.

4. (Canceled)

5. (Original) The apparatus of claim 1 wherein each of said first and second substrates comprise a plurality of optically active areas.

6. (Canceled)

7. (Canceled)

8. (Original) The apparatus of claim 1, wherein said first and second surfaces are substantially parallel and spaced apart by a distance which is in the range of about 0.02 mm to about 0.15 mm.

9. (Previously Presented) The apparatus of claim 1, wherein said second substrate is an IC.

10. (Previously Presented) The apparatus claim 1, wherein said second substrate is a waveguide daughter board.

11. (Original) The apparatus of claim 1 wherein one of said optically active areas comprises a photodiode.

12. (Original) The apparatus of claim 1 wherein one of said optically active areas comprises a semiconductor laser.

13. – 32. (Canceled)

33. (Currently Amended) An apparatus for transmitting light comprising:  
a first substrate having a first surface including at least one first optically active area,  
wherein said first substrate is an optical circuit board;  
a second substrate having a second surface positioned in opposing spaced apart  
relationship from said first surface, where said second surface has at least one second  
optically active area opposing said at least one first optically active area;  
a polymer layer disposed between said first and second substrates; and  
a waveguide disposed within said polymer layer between said first and second  
optically active areas on said first and second surfaces, where said waveguide comprises a  
polymer core and a cladding for transmitting light therebetween; and  
one or more additional structures embedded within said polymer layer disposed  
between said first and second substrates.

34. (Currently Amended) The apparatus of claim 33, wherein said cladding  
comprises a ~~second~~ polymer material, and wherein said ~~first~~ polymer core is a photosensitive  
polymer.

35. (Currently Amended) The apparatus of claim 34, wherein said ~~first~~ polymer  
core comprises a fluorinated polymer.

36. (Previously Presented) The apparatus of claim 33 wherein each of said first  
and second substrates comprise a plurality of optically active areas.

37. (Canceled)

38. (Canceled)

39. (Previously Presented) The apparatus of claim 33, wherein said first and  
second surfaces are substantially parallel and spaced apart by a distance which is in the range  
of about 0.02 mm to about 0.15 mm.

40. (Previously Presented) The apparatus of claim 33, wherein said second substrate is an IC.

41. (Previously Presented) The apparatus claim 33, wherein said second substrate is a waveguide daughter board.

42. (Previously Presented) The apparatus of claim 33 wherein one of said optically active areas comprises a photodiode.

43. (Previously Presented) The apparatus of claim 33 wherein one of said optically active areas comprises a semiconductor laser.